

REMARKS

This responds to the Office Action mailed on June 14, 2005.

Claims 5, 9, 15, 19, and 25 are amended. No claims have been canceled or added. As a result, claims 2, 5, 9, 12-13, and 15-38 are now pending in this application.

The amendments to the claims are fully supported by the specification as originally filed, and no new matter will be added by entry of the amendment. The amendments clarify the claims and are not intended to limit the scope of equivalents to which any claim element may be entitled. Applicant respectfully requests reconsideration of the above-identified application in view of the amendments above and the remarks that follow.

Claim Objections

Claims 5, 9, 15, 19 and 25 were objected to due to informalities. In particular, “the host” of each amended claim allegedly lacked clarity. While Applicant respectfully disagrees, for ease of prosecution, these claims have been amended accordingly. Specifically, these claims have been amended to recite “a host” instead.

§103 Rejection of the Claims

1. Claims 2, 3, 5, 9 and 12-30 were rejected under 35 USC § 103(a) as being unpatentable over Graham-Cumming, Jr., (U.S. 6,182,146) in view of McKaughan et al. (U.S. 5,802,305).

This rejection is respectfully traversed.

The Examiner has the burden under 35 U.S.C. §103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir.1988). As part of establishing a *prima facie* case of obviousness, the Examiner must show that some objective teaching in the prior art or some knowledge generally available to one of ordinary skill in the art would lead an individual to combine the relevant teaching of the references. *Id.*

The court in *Fine* stated that:

Obviousness is tested by "what the combined teaching of the references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 878 (CCPA 1981)). But it "cannot be established by

combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." *ACS Hosp. Sys.*, 732 F.2d at 1577, 221 USPQ at 933. And "teachings of references can be combined *only* if there is some suggestion or incentive to do so."

Id. (emphasis in original).

The M.P.E.P. adopts this line of reasoning, stating that

"In order for the Examiner to establish a *prima facie* case of obviousness, three base criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ 2d 1438 (Fed.Cir. 1991))." *M.P.E.P.* §2142. (emphasis added.)

No Motivation Found of Record to Combine References

With regard to independent claim 2, the Examiner admits on page 4 of the Action that 'Graham does not specifically disclose when there is a host application assigned to the port number; sending a wake-up message to a power-managed host computer...' Instead the Action looks to McKaughan for sending a wake-up message to a power-managed host computer. The Action concludes on page 5 that it would have been obvious to one having ordinary skill in the art:

"...having the teachings of Graham and McKaughan before him at the time the invention was made, to modify the system and method disclosed by Graham to include power management as taught by McKaughan to obtain sending a wake-up to a power-managed host computer when there is a host application assigned to the port number. The teachings of McKaughan would suggest to one of ordinary skill that power supplied to the entire computer is not necessary to determine if a host application is associated to a port number of a packet. One of ordinary skill would modify Graham, based on McKaughan teachings, by supplying power to the devices needed by the packet analysis module until a determination of the packet is made. Specifically, power would only need to be supplied to the elements in figure 3. If the packet were to be passed on to the application a wake-up message would be sent to power up the computer so that it may be processed. One of ordinary skill would have made the modification to achieve power

conservation in a computer system in a network environment in view of the teachings of McKaughan.” Action, page 5.

Applicant respectfully disagrees.

There is no indication in Graham that Graham is attempting to or desiring to reduce power consumption. In fact, even the Examiner states that Graham is “silent with respect to the power consumption aspect of his particular invention.” Therefore, there is simply no indication in the Action that there is motivation in *Graham* to look to McKaughan to reduce power consumption (or to modify Graham to include a wake-up message or a power-managed computer). And thus, there is no motivation in the record to combine the references to arrive at the present claims.

There must be evidence of record to suggest the combination. Applicant respectfully requests that the Examiner place a reference in the file that indicates motivation in *Graham* to look to McKaughan for motivation to reduce power consumption in Graham. In the alternative, Applicant requests that the Examiner place an affidavit of personal knowledge as to this motivation being gleaned only from knowledge which was within the level of ordinary skill at the time the claimed invention was made (and not from Applicant’s disclosure). Absent such a reference or affidavit, the proposed combination is impermissible hindsight.

Because obviousness may not be established using hindsight and may not be established in view of the teachings or suggestions of the Applicant, the Action does not demonstrate a suggestion or motivation to combine Graham and McKaughan. Therefore, the Office Action has not established a *prima facie* case of obviousness for independent claims 2, 12, and 23. Thus, because there is no motivation to combine the references, claims 2, 12, and 23 are patentable over these cited references.

For the following additional reasons, there is no motivation or suggestion to combine Graham and McKaughan to arrive at the present claims: The claimed invention as a whole must be considered in an obviousness test; obviousness may not be found where a modification renders a device inoperable; and obviousness may not be established using hindsight.

Claimed Invention as a Whole Must be Considered in an Obviousness Test

The test for obviousness under §103 must take into consideration the invention as a whole; that is, one must consider the particular problem solved by the combination of elements that define the invention. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985). *A patentable invention may lie in the discovery of the source of a problem, even though the remedy may be obvious once the source of the problem is identified.* MPEP §2141.02. (emphasis added.) This is part of the “subject matter as a whole” which should always be considered in determining the obviousness of an invention under 35 USC §103. *In re Spinnoble*, 405 F. 2d 578, 585, 160 USPQ 237, 243 (CCPA 1969). MPEP §2141.02.

In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983); *Schenck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983); *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985); MPEP § 2141.02.

The Examiner must, as one of the inquiries pertinent to any obviousness inquiry under 35 U.S.C. §103, recognize and consider not only the similarities but also the critical differences between the claimed invention and the prior art. *In re Bond*, 910 F.2d 831, 834, 15 USPQ2d 1566, 1568 (Fed. Cir. 1990), *reh'g denied*, 1990 U.S. App. LEXIS 19971 (Fed. Cir. 1990).

The Abstract of the Graham patent describes:

“a packet analysis module which (sic) performs a two step verification of an application for a packet. In a first step, the packet analysis module applies the ports from a packet to the application-port mapping table to obtain a first application identifier. In a second, separate step, the packet analysis module applies identification logic to the packet to identify an application based on packet data. The second step may be used for each packet or only where the packet is not identified by the application-port mapping table.”

As shown and described within Graham, the computer 300 of Figure 4 analyzes packets. If an application identifier is not found, the analyzed packets are merely discarded or passed onto a default application. Figure 6 at 613, 621, 623, and Figure 7 at 723 and 717 of Graham. The

computer system of Graham may be exposed to hackers, because the packets of Graham are analyzed within the memory 303 of the computer 300, and because the packets may be passed to a default application, if there is no known application associated with the packet. Figure 4, element 623 of Figure 6, element 717 of Figure 7, and column 8, lines 25-38 of Graham.

In contrast to Graham, Applicant's packet may be forwarded to the host computer after filtering to protect the host computer from hackers. In the present independent claims 2, 12, and 23, the wake-up message is sent to the power-managed host computer "*when* there is a host application associated with the port number" (emphasis added). Further, as claimed in independent claim 2, "when there is not a host application associated with the port number," the packet is discarded. Generally, the packet may be discarded or rejected before the host computer may receive the packet so that the host computer may be protected from hackers. See, for instance, page 6, lines 16-18, and page 2, lines 15-24 of the present specification.

The abstract of the McKaughan patent describes:

"In a computer network including a plurality of interconnected computers, one of the computers being a sleeping computer in a power down state, the sleeping computer having a list of packets to listen for stored on a network interface card associated with the sleeping computer, a method of waking the sleeping computer from the computer network. An incoming packet of information is transmitted from one of the computers in the network to the sleeping computer. When the network interface card of the sleeping computer detects the incoming packet, it compares the incoming packet to the list of packets stored on the network interface card. If the incoming packet matches one of the packets in the list of packets stored on the network interface card, or if the incoming packet is directly addressed to the sleeping computer, then a signal is issued to wake the sleeping computer. Otherwise, the incoming packet is discarded and the sleeping computer is not awakened."

Independent claims 2, 12, and 23 include determining whether there is a host application associated with the port number of the packet, as opposed to McKaughan, which merely refers to comparing "the incoming packet to the list of packets stored on the network interface card" (citing the Abstract of McKaughan).

Therefore, each cited reference and Applicant are clearly attempting to solve different problems and therefore seek very different solutions. Accordingly, considering the claimed invention as a whole, there is clearly no suggestion or motivation in the cited

references or to those skilled in the art to send “a wake-up message to a host computer” as recited in each of the independent, presently-pending claims 2, 12, and 23. For this reason, claims 1, 12 and 23 are patentable over these cited references.

Obviousness May Not Be Found Where a Modification Renders a Device Inoperable

Additionally, while it is true that it is the teachings, not the actual physical embodiments, of references that are considered in making an obvious determination under 35 USC §103 (*In re Keller* at 425), on the other hand, it is equally true that if the teachings of a prior art reference would lead one skilled in the art to make a modification which would render another prior art device inoperable, then such a modification would generally not be obvious. *In re Gordon*, 733 F.2d 900, 902, 2212 USPA 1125, 1127 (Fed Cir. 1984).

The addressable memory 303 of Graham includes the software product 304 (packet analysis module 100). Figure 4, and column 8, lines 25-38 of Graham. There is no evidence of record that Graham indicates that the network interface 306 includes (or can include) the software product 304. Clearly, Graham does not indicate operating the computer in a low power mode.

McKaughan, on the other hand, refers to powering down the computer except for power to the network interface card, before analyzing packets. See 340 of Figure 3, and see Figure 4.

Modifying the computer 300 of Graham as suggested by the Action would render the packet analysis module 100 of Graham inoperable. By powering down the computer 300 of Graham, the software product 304 would not have power and thus not be able to execute. Even if the network interface 306 of Graham was with power while the computer 300 was powered down, there is no demonstrated indication in a reference of record to modify the network interface 306 (i.e. the packet analysis module 100), such that the software product 304 would be moved to be included in the “powered” network interface 306.

Page 12 of the Action states that “one of ordinary skill would readily recognize that Graham would be modified to have a network interface as taught by McKaughan in order in enjoy the advantages taught by McKaughan. Specifically, the software of Graham and any

necessary hardware would reside in a network interface card that would remain powered when the rest of the computer is powered down.”

Applicant respectfully disagrees and requests that the Examiner place a reference in the file that indicates motivation to modify the network interface 306 of Graham to include software and hardware as suggested in the Action. In the alternative, Applicant requests that the Examiner place an affidavit of personal knowledge as to this motivation being gleaned only from knowledge which was within the level of ordinary skill at the time the claimed invention was made (and not from Applicant’s disclosure). Absent such a reference or affidavit, there is no motivation for the proposed modification of the network interface 306. Until evidence is made of record, there is simply no motivation for Graham to operate in low power to analyze packets.

Because obviousness may not be established where a modification renders a device inoperable, the Action does not show that there is some suggestion or motivation to combine Graham and McKaughan. Therefore, the Office Action has not established a *prima facie* case of obviousness for independent claims 2, 12, and 23. Thus, because there is no motivation to combine the references, claims 2, 12, and 23 are patentable over these cited references.

Obviousness May Not Be Established Using Hindsight

The Examiner must avoid hindsight. *In re Bond*, 910 F.2d 831, 834, 15 USPQ2d 1566, 1568 (Fed. Cir. 1990). “Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor.” *Para-Ordnance Mfg., Inc. v. SGS Importers Int’l, Inc.*, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), *cert. denied*, 117 S.Ct. 80 (1996) citing *W.L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13, *cert. denied*, 469 U.S. 851 (1984).

Because the computer 300 of McKaughan refers to *powering down* the computer except for power to the network interface card, before analyzing packets, and because Graham is to be *powered on* to analyze the packets and simply can not operate in low power to analyze packets, the only way to combine Graham and McKaughan is through hindsight.

Because obviousness may not be established using hindsight and may not be established in view of the teachings or suggestions of the Applicant, the Action does not show that there is

some suggestion or motivation to combine Graham and McKaughan. Therefore, the Office Action has not established a *prima facie* case of obviousness for independent claims 2, 12, and 23. Thus, because there is no motivation to combine the references, claims 2, 12, and 23 are patentable over these cited references.

Because of lack of motivation to combine Graham and McKaughan to arrive at the present claims, the rejection under 35 U.S.C. § 103(a) cannot stand. Applicant respectfully requests reconsideration and allowance of independent claims 2, 12, and 23.

Claims 5, 9, 13, 15-22 and 24-30 depend from independent claims 2, 12, or 23 and incorporate all of the limitations therein, respectively. Claims 5, 9, 13, 15-22 and 24-30 are also asserted to be allowable for the reasons presented above, and Applicant respectfully requests notification of same. Applicant considers additional elements of claims 5, 9, 13, 15-22 and 24-30 to further distinguish over the cited references, and Applicant reserves the right to present arguments to this effect at a later date.

2. Claims 31-38 were also rejected under 35 USC § 103(a) as being unpatentable over Novoa et al. (U.S. 6,493,824) in view of Graham-Cumming, Jr. ("Graham").

This rejection is respectfully traversed.

Novoa recites:

A secure system and method is provided for remotely waking a computer from a power down state. In one embodiment, a network interface card receives incoming data packets via a network connector. A control module is coupled to the network connector and is configured to search the incoming packets for a wake-up pattern. *The control module also verifies that the packet's destination address matches the destination address of the network interface card. If the destination addresses match and a wake-up pattern is found, the control module decrypts an encrypted value from the incoming packet and compares the result to an expected value.* A successful comparison causes the control module to assert a signal to wake up the host computer. Preferably, a standard public/private key pair encryption scheme is used, and the source of the data packet encrypts the expected value with a private key. All computers which may receive wake-up packets are provided with a public key with which to decrypt values contained in a security field of any wake-up packets. *A successful decryption serves to certify that the wake-up packet was transmitted from an authorized source.* For added security, the expected value and public/private keys may be changed on a regular basis, or even every time a valid wake-up packet is received. The new value may be provided in the wake-up

packet, to be stored by the network card for the next use. (emphasis added) Novoa, Abstract.

For the following reasons, there is no motivation or suggestion to combine Novoa and Graham to arrive at the present claims: there is no motivation found in the record to combine the references as proposed, and the proposed modification of Novoa destroys the stated purpose of Novoa.

No Motivation Found of Record to Combine References

With regard to independent claim 33 and dependent claim 31, the Action states on pages 8-9 that Graham refers to “dynamic ports are frequently used to provide security [and Graham’s invention] further provides the advantage of improve accuracy in the detection and accounting of traffic data.” The Action concludes that it would have been obvious:

“to one having ordinary skill in the art, having the teachings of Novoa and Graham before them at the time the invention was made, to modify the second filter of Novoa to include the filter as taught by Graham. One of ordinary skill in the art would have been motivated to make the modification in order to improve the accuracy in the detection and accounting of traffic and accurately report and manage such traffic. Further, Graham suggests that such a filter would be useful for providing security in such a network system.”

Applicant respectfully disagrees.

First, the statement that “Graham suggests that such a filter would be useful for providing security in such a network system” is not supported. There is nothing of record to suggest that “dynamic ports” is equivalent to identifying an application based on packet data. Applicant respectfully requests that the Examiner place a reference in the file that indicates such equivalency. In the alternative, Applicant requests that the Examiner place an affidavit of personal knowledge as to this equivalency being gleaned only from knowledge which was within the level of ordinary skill at the time the claimed invention was made (and not from Applicant’s disclosure). Absent such a reference or affidavit, the asserted statement does not demonstrate motivation.

Second, there is no demonstrated indication from the Action that Novoa is attempting to improve the accuracy in the detection and accounting of traffic and

accurately report and manage such traffic. Therefore, there is simply no indication in the Action of motivation in Novoa to look to Graham for a suggestion to combine the two references. Again, there must be evidence of record to suggest the combination. Applicant respectfully requests that the Examiner place a reference in the file that indicates motivation for Novoa to look to Graham for motivation to improve the accuracy in the detection and accounting of traffic and accurately report and manage such traffic in Novoa. In the alternative, Applicant requests that the Examiner place an affidavit of personal knowledge as to this motivation being gleaned only from knowledge which was within the level of ordinary skill at the time the claimed invention was made (and not from Applicant's disclosure). Absent such a reference or affidavit, the proposed combination is impermissible hindsight.

Proposed Modification of Novoa Destroys Stated Purpose of Novoa

If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); MPEP §2143.01.

The stated purpose of Novoa includes the following:

“it is desirable for a computer system in a power down state to be able to discriminate between authorized wake-up packets and unauthorized wake-up packets.” Novoa, col. 4, lines 43-45.

To ensure the packet originated from the authorized source, Novoa recites:

“Preferably, the security field value has been encrypted by an authorized source's private key. In a standard public key/private key encryption scheme, this means that the message can only be correctly decrypted by using the corresponding public key. If in fact the authorized source is the only one in possession of the private key, successful decryption using the public key ensures that the packet originated from the authorized source.” Novoa, col. 9, lines 35-42.

The proposed combination destroys the stated purpose of Novoa.

The Examiner proposes to modify the second filter of Novoa (“second filter for security purposes [at] step 414, col. 9, lines 43-53” of Novoa) to include the “filter” as taught by Graham. This modification destroys the purpose of Novoa, which includes having an encryption scheme to discriminate between authorized wake-up packets and unauthorized wake-up packets.

If the proposed modification modifies the “second filter” of Novoa to include the Graham “filter,” this would destroy the stated purpose because Graham’s “filter” does not discriminate between authorized wake-up packets and unauthorized wake-up packets. In fact, Graham identifies an application based on packet data using an application port mapping table. If, for example, the system of the proposed combination of Novoa and Graham received a packet associated with an installed universal application (assuming the packet made it through the “first filter”), the system would be woken up, and there would be no discrimination between authorized wake-up packets and unauthorized wake-up packets as taught by Novoa.

Again, the Abstract of Novoa states: *“If the destination addresses match and a wake-up pattern is found, the control module decrypts an encrypted value from the incoming packet and compares the result to an expected value ... A successful decryption serves to certify that the wake-up packet was transmitted from an authorized source.”*

There is no evidence of record to assert that identifying an associated application is an equivalent security measure to an encryption scheme to certify that a wake-up packet was transmitted from an authorized source, and thus would not destroy the purpose of Novoa. Applicant respectfully requests that the Examiner place a reference in the file that indicates such equivalency. In the alternative, Applicant requests that the Examiner place an affidavit of personal knowledge as to this equivalency being gleaned only from knowledge which was within the level of ordinary skill at the time the claimed invention was made (and not from Applicant’s disclosure). Absent such a reference or affidavit, the proposed combination destroys the purpose of Novoa, and is thus impermissible.

Because obviousness may not be established without motivation to combine the references and the proposed modification would destroy the stated purpose of Novoa, the Action has not established a *prima facie* case of obviousness for independent claims 33 and 36. The

rejection under 35 U.S.C. § 103(a) cannot stand. Thus, because there is no motivation to combine the references, claims 33 and 36 are patentable over these cited references.

Claims 31, 32, 34, 35, 37, 38 depend from independent claims 2, 33 or 36 and incorporate all of the limitations therein, respectively. Claims 31, 32, 34, 35, 37, 38 are also asserted to be allowable for the reasons presented above, and Applicant respectfully requests notification of same. Applicant considers additional elements of claims 31, 32, 34, 35, 37, 38 to further distinguish over the cited references, and Applicant reserves the right to present arguments to this effect at a later date.

AMENDMENT UNDER 37 C.F.R. 1.116 – EXPEDITED PROCEDURE

Serial Number: 09/746,205

Filing Date: December 22, 2000

Title: PORT-BASED PACKET FILTER

Assignee: Intel Corporation

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Dkt: 884.336US1 (INTEL)

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney, Lucinda Price (located in Gainesville, Florida), at (352) 373-8804, or Applicant's below-named representative (located in Minneapolis, Minnesota), if prosecution will be assisted thereby.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 15th day of August 2005.

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Signature